

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 July 2004 (22.07.2004)

PCT

(10) International Publication Number  
**WO 2004/061087 A2**

- (51) International Patent Classification<sup>7</sup>: C12N (74) Agent: ELBING, Karen, L.; Clark & Elbing LLP, 101 Federal Street, Boston, MA 02110 (US).
- (21) International Application Number: PCT/US2003/041788 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 31 December 2003 (31.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/437,235 31 December 2002 (31.12.2002) US (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): THE GENERAL HOSPITAL CORPORATION [US/US]; 55 Fruit Street, Boston, MA 02114 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): RUVKUN, Gary [US/US]; 120 Herrick Road, Newton, MA 02459 (US). FRAND, Alison [US/US]; 97 Brookline Street, Unit 2, Cambridge, MA 02139 (US).
- Published:**  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHODS AND COMPOSITIONS OF ECDYSOZOAN MOLT INHIBITION

(57) Abstract: In general, this invention relates to nucleic acid and amino acid sequences involved in molting and the use of these sequences as targets for the development of compounds that disrupt Ecdysozoan molting, and are useful as insecticides, nematicides, and anti-parasitic agents.

WO 2004/061087 A2

Rec'd PCT/PTO 22 JUN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 July 2004 (22.07.2004)

PCT

(10) International Publication Number  
**WO 2004/061087 A3**

(51) International Patent Classification<sup>7</sup>: **C12Q 1/68**,  
G01N 33/53, 33/567, C12P 21/06, C12N 5/04, 5/06, 5/10,  
15/82, C07K 1/00, 14/00, 17/00

(21) International Application Number:  
PCT/US2003/041788

(22) International Filing Date:  
31 December 2003 (31.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/437,235 31 December 2002 (31.12.2002) US

(71) Applicant (for all designated States except US): **THE  
GENERAL HOSPITAL CORPORATION** [US/US]; 55  
Fruit Street, Boston, MA 02114 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RUVKUN, Gary**  
[US/US]; 120 Herrick Road, Newton, MA 02459 (US).  
**FRAND, Alison** [US/US]; 97 Brookline Street, Unit 2,  
Cambridge, MA 02139 (US).

(74) Agent: **ELBING, Karen, L.**; Clark & Elbing LLP, 101  
Federal Street, Boston, MA 02110 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,  
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,  
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

(88) Date of publication of the international search report:  
3 February 2005

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND COMPOSITIONS OF ECDYSOZOAN MOLT INHIBITION

(57) Abstract: In general, this invention relates to nucleic acid and amino acid sequences involved in molting and the use of these sequences as targets for the development of compounds that disrupt Ecdysozoan molting, and are useful as insecticides, nematicides, and anti-parasitic agents.

WO 2004/061087 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/41788

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; G01N 33/53, 33/567; C12P 21/06; C12N 5/04, 5/06, 5/10, 15/82; C07K 1/00, 14/00, 17/00  
US CL : 435/6, 7.1, 7.21, 69.1, 418, 419, 468, 348; 530/350; 536/24.5

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6, 7.1, 7.21, 69.1, 418, 419, 468, 348; 530/350; 536/24.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,414,115 B1 (CHANDRASHEKAR et al.) 02 July 2002, see entire document.	1-67
X	LIZOTTE-WANIEWSKI et al. Identification of Potential Vaccine and Drug Target Candidates by Expressed Sequence Tag Analysis and Immunoscreening of Onchocerca volvulus Larval cDNA Libraries. Infection and Immunity. June 2000, Vol. 68, No. 6, pages 3491-3501, see entire document.	1-67
X	ABOObAKER et al, Functional genomics for parasitic nematodes and platyhelminths. Trends in Parasitology. April 2004, Vol. 20, No. 4, pages 178-184, see entire document.	1-67



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

15 November 2004 (15.11.2004)

Date of mailing of the international search report

10 DEC 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Maria B Marvich, PhD

Telephone No. 571-272-1600

## INTERNATIONAL SEARCH REPORT

**Continuation of B. FIELDS SEARCHED Item 3:**

East databases-USPAT, PGPUB, EPO, JPO, Derwent, IBM-IDB

STN databases-Medline, caplus scisearch

searched the mlt nucleic acids and othologs, nematode infection, drug screen , molting